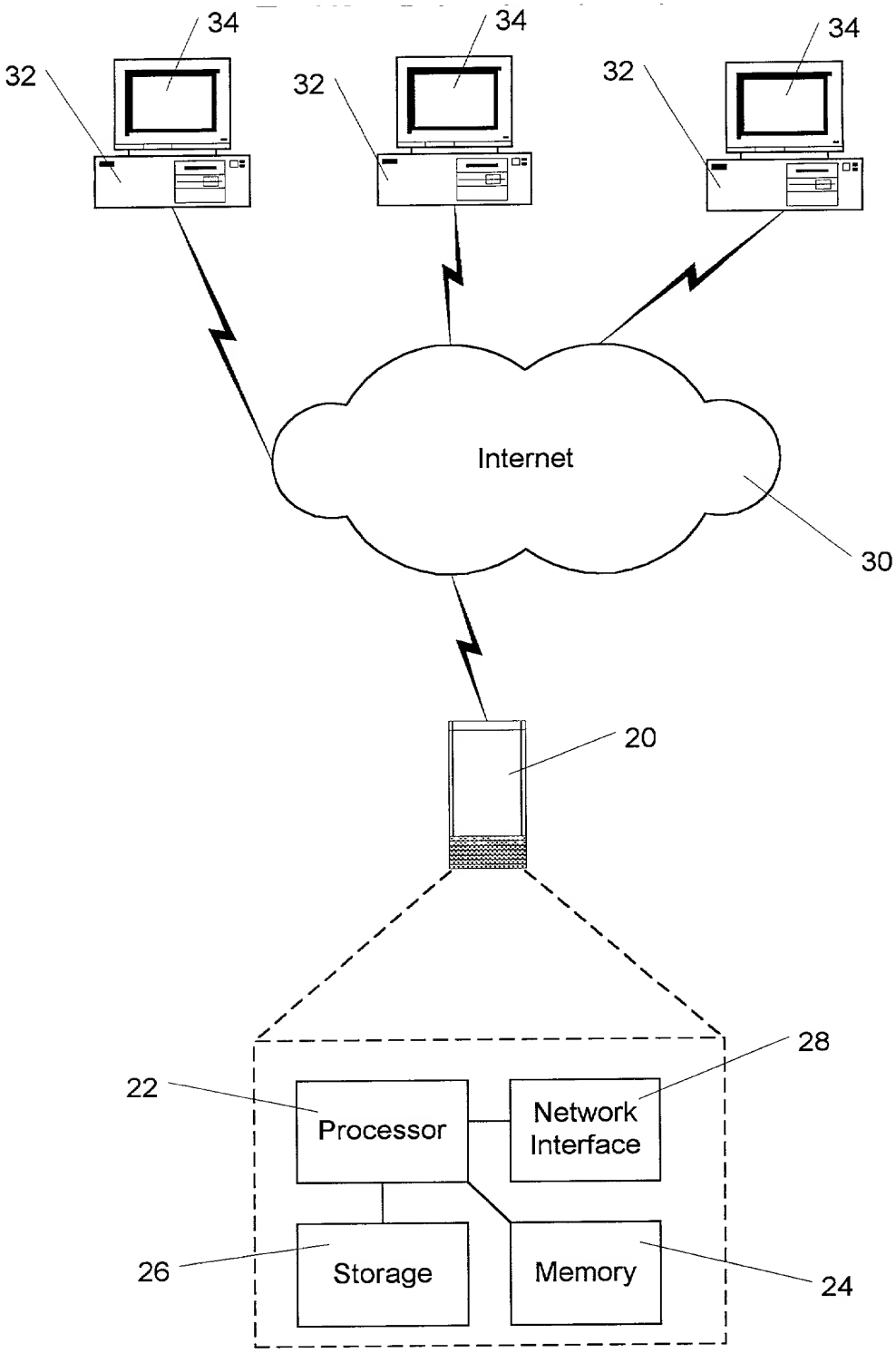

34
32
34
32
34
32
Internet
30
20
28
22
Processor
Network Interface
26
Storage
Memory
24

FIG. 1

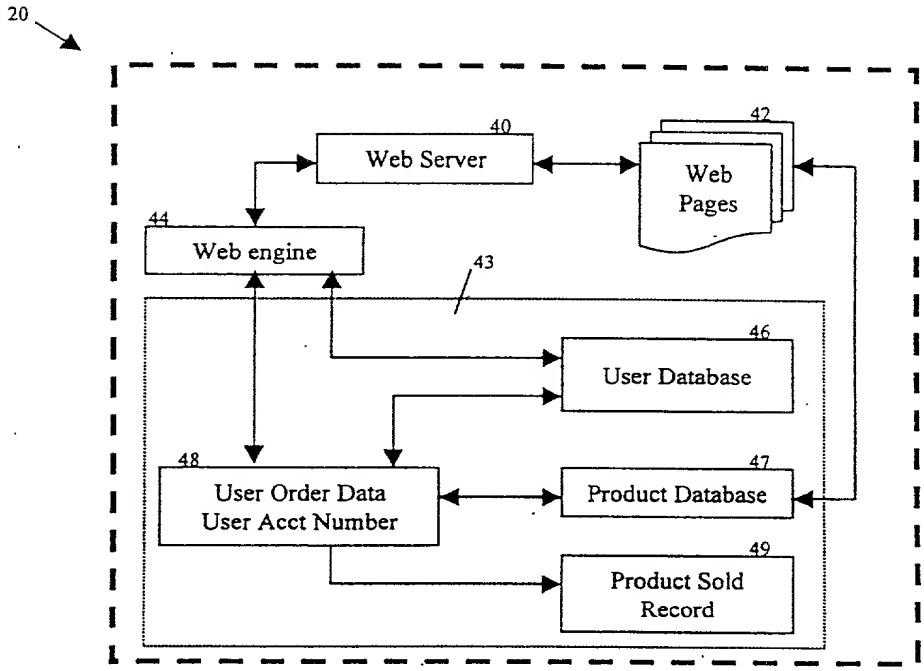

20
40
Web Server
42
Web Pages
44
Web engine
43
46
User Database
48
User Order Data
User Acct Number
47
Product Database
49
Product Sold Record

FIG. 2

FIG. 3

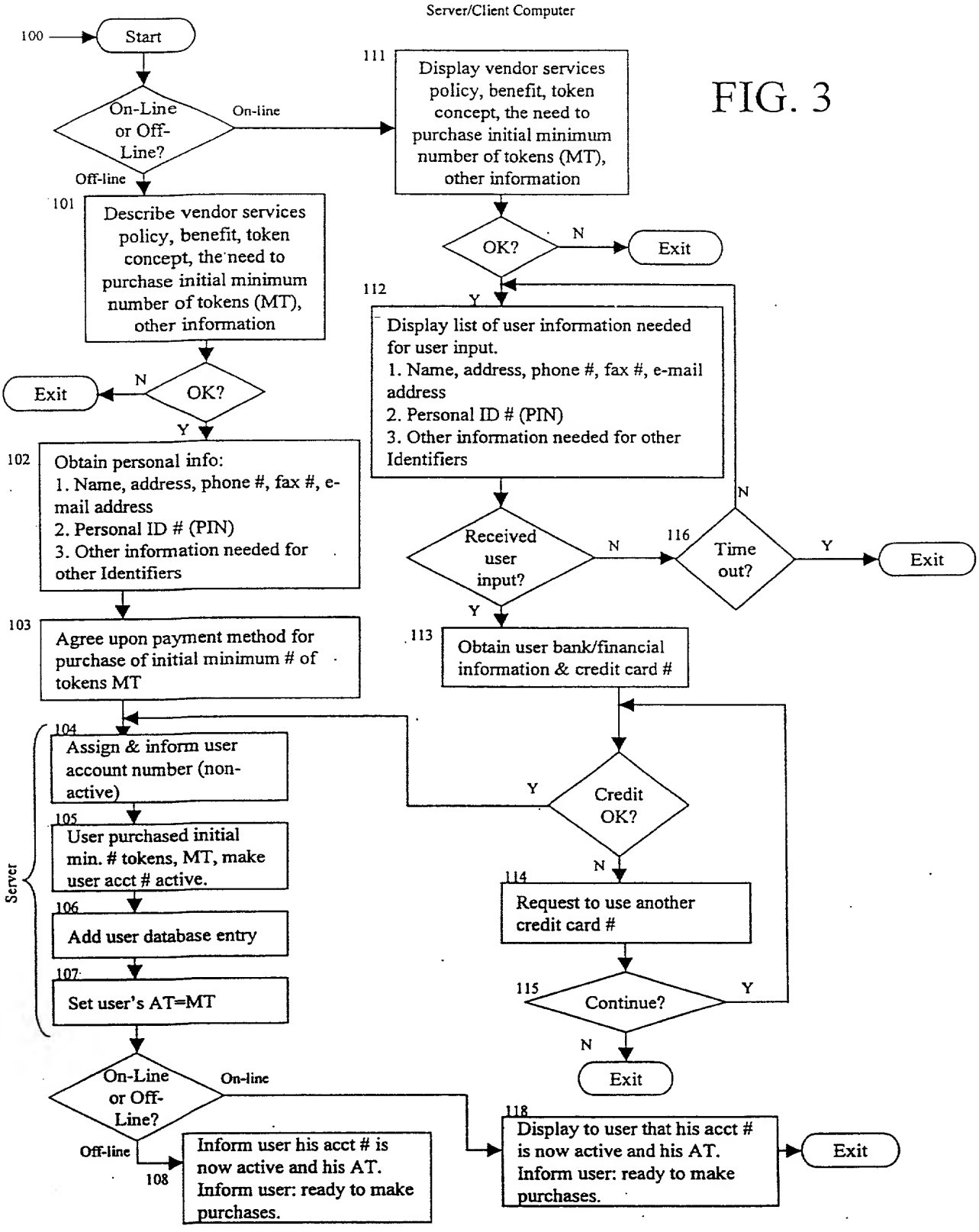
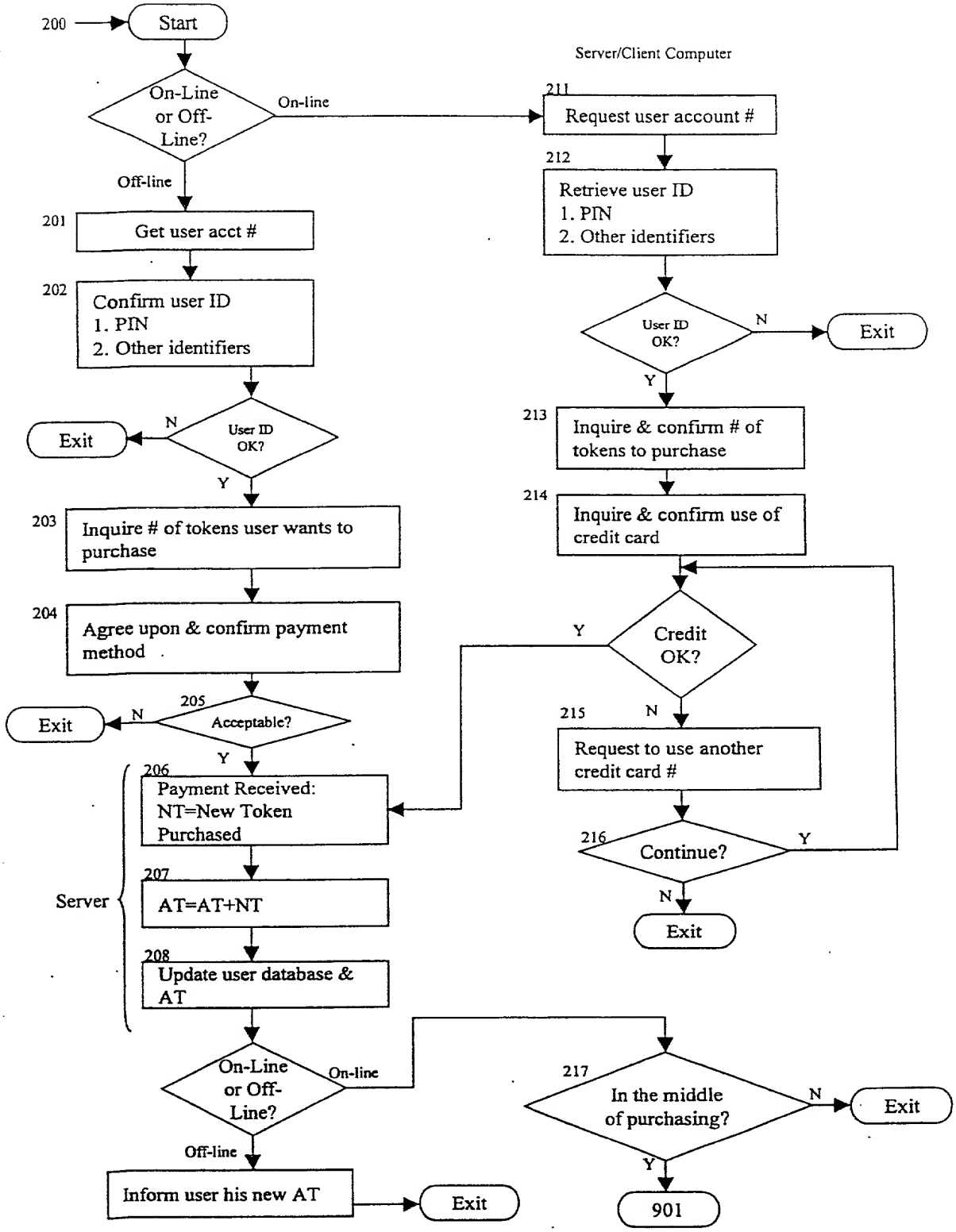

Server/Client Computer
Server
100
Start
On-Line or Off-Line?
On-line
Off-line
101
Describe vendor services policy, benefit, token concept, the need to purchase initial minimum number of tokens (MT), other information
OK?
N
Exit
Y
102
Obtain personal info:
1. Name, address, phone #, fax #, e-mail address
2. Personal ID # (PIN)
3. Other information needed for other Identifiers
103
Agree upon payment method for purchase of initial minimum # of tokens MT
104
Assign & inform user account number (non-active)
105
User purchased initial min. # tokens, MT, make user acct # active.
106
Add user database entry
107
Set user's AT=MT
On-Line or Off-Line?
On-line
Off-line
108
Inform user his acct # is now active and his AT. Inform user: ready to make purchases.
111
Display vendor services policy, benefit, token concept, the need to purchase initial minimum number of tokens (MT), other information
OK?
N
Exit
Y
112
Display list of user information needed for user input.
1. Name, address, phone #, fax #, e-mail address
2. Personal ID # (PIN)
3. Other information needed for other Identifiers
Received user input?
N
116
Time out?
Y
Exit
N
Y
113
Obtain user bank/financial information & credit card #
Credit OK?
Y
N
114
Request to use another credit card #
115
Continue?
Y
N
Exit
118
Display to user that his acct # is now active and his AT. Inform user: ready to make purchases.
Exit

FIG. 4


200
Start
Server/Client Computer
On-Line or Off-Line?
On-line
Off-line
211
Request user account #
212
Retrieve user ID
1. PIN
2. Other identifiers
User ID OK?
N
Exit
Y
201
Get user acct #
202
Confirm user ID
1. PIN
2. Other identifiers
N
User ID OK?
Exit
Y
213
Inquire & confirm # of tokens to purchase
214
Inquire & confirm use of credit card
203
Inquire # of tokens user wants to purchase
204
Agree upon & confirm payment method
Credit OK?
Y
205
N
Acceptable?
Exit
Y
215
N
Request to use another credit card #
206
Payment Received: NT=New Token Purchased
216
Continue?
Y
N
Exit
Server
207
AT=AT+NT
208
Update user database & AT
On-Line or Off-Line?
On-line
Off-line
217
In the middle of purchasing?
N
Exit
Y
Inform user his new AT
Exit
901

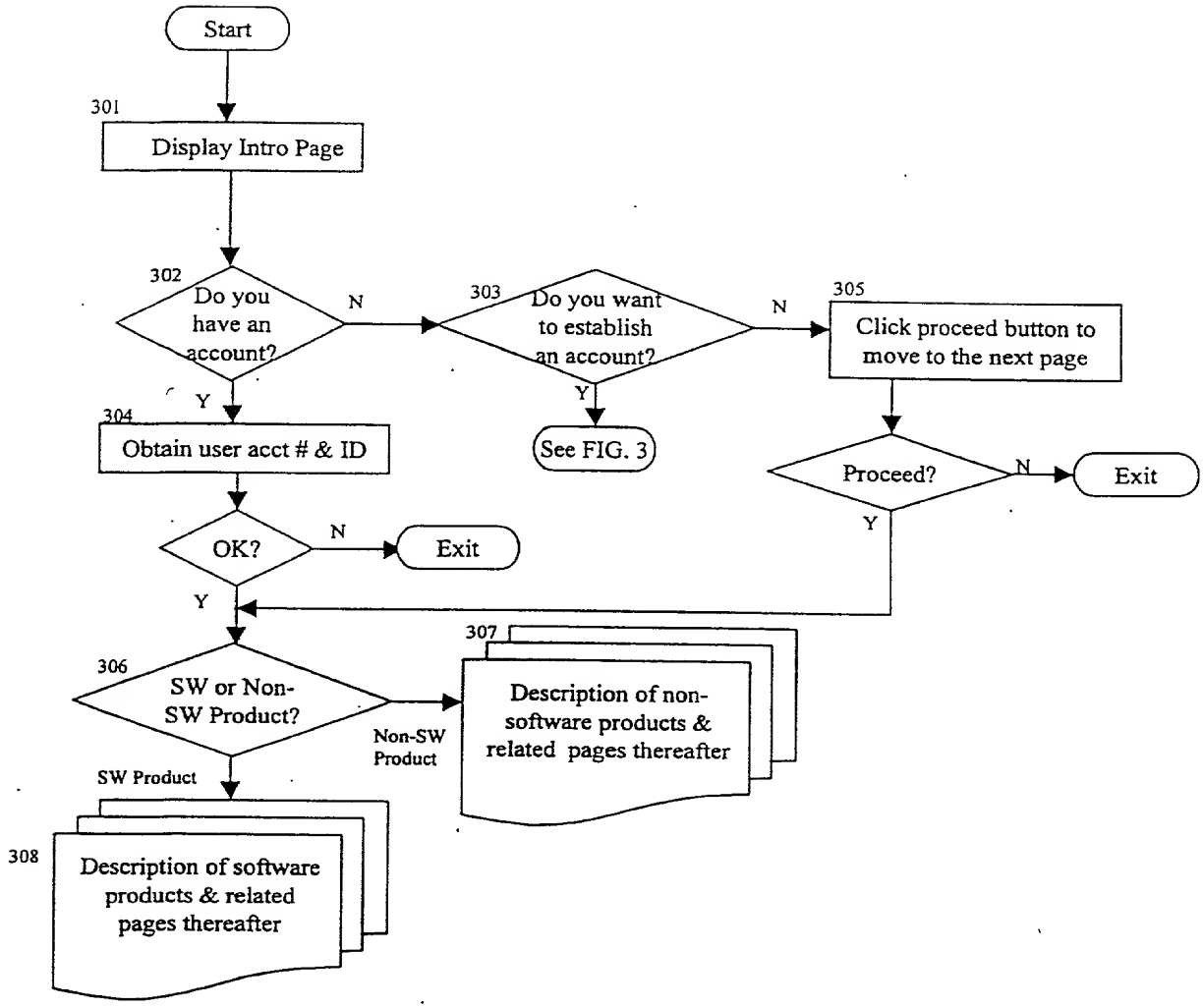

Start
301
Display Intro Page
302
Do you have an account?
N
303
Do you want to establish an account?
N
305
Click proceed button to move to the next page
Y
Y
304
Obtain user acct # & ID
See FIG. 3
Proceed?
N
Exit
Y
OK?
N
Exit
Y
306
SW or Non-SW Product?
307
Description of non-software products & related pages thereafter
Non-SW Product
SW Product
308
Description of software products & related pages thereafter

FIG. 5

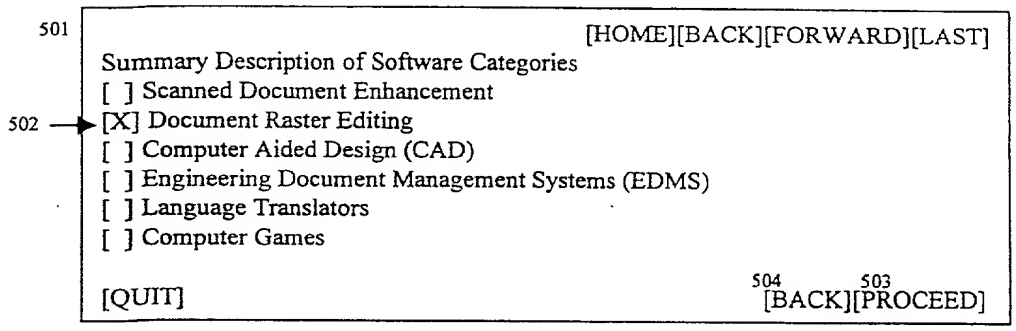

501
[HOME][BACK][FORWARD][LAST]
Summary Description of Software Categories
[ ] Scanned Document Enhancement
502
[X] Document Raster Editing
[ ] Computer Aided Design (CAD)
[ ] Engineering Document Management Systems (EDMS)
[ ] Language Translators
[ ] Computer Games
[QUIT]
504
503
[BACK][PROCEED]

FIG. 6

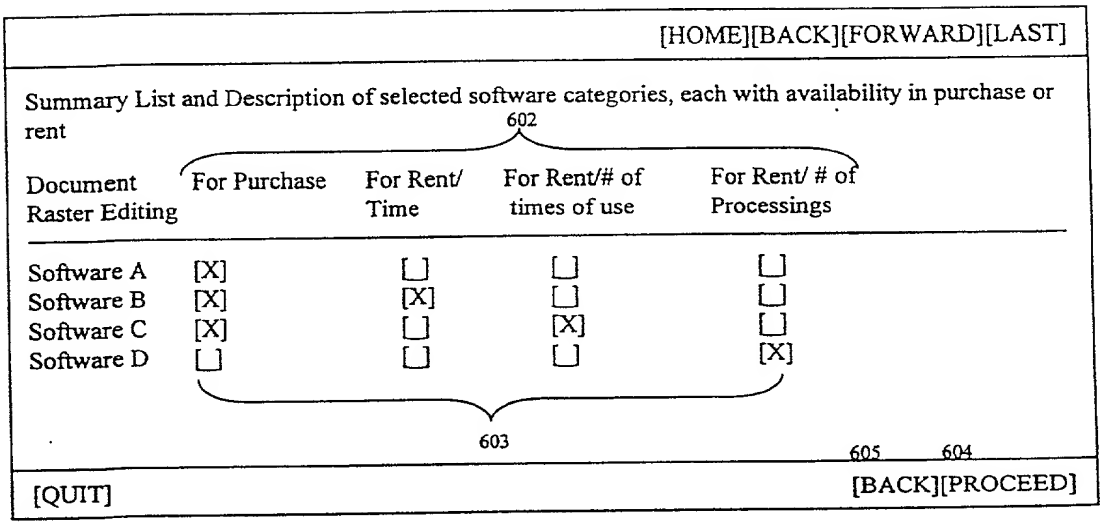

[HOME][BACK][FORWARD][LAST]
601
Summary List and Description of selected software categories, each with availability in purchase or rent
602
Document Raster Editing
For Purchase
For Rent/ Time
For Rent/# of times of use
For Rent/ # of Processings
Software A [X] [ ] [ ] [ ]
Software B [X] [X] [ ] [ ]
Software C [X] [ ] [X] [ ]
Software D [ ] [ ] [ ] [X]
603
605
604
[QUIT]
[BACK][PROCEED]

FIG. 7

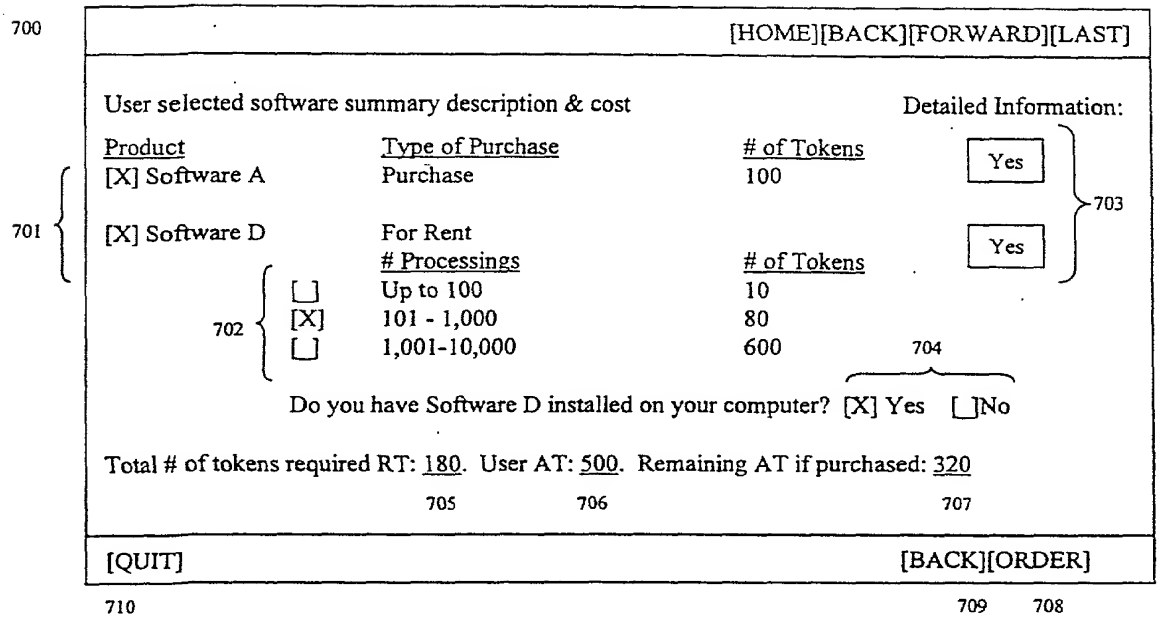

700
[HOME][BACK][FORWARD][LAST]
User selected software summary description & cost
Detailed Information:
Product
Type of Purchase
# of Tokens
[X] Software A
Purchase
100
Yes
701
703
[X] Software D
For Rent
Yes
Processings
of Tokens
[ ] Up to 100 10
[X] 101 - 1,000 80
[ ] 1,001-10,000 600
702
704
Do you have Software D installed on your computer? [X] Yes [ ]No
Total # of tokens required RT: 180. User AT: 500. Remaining AT if purchased: 320
705
706
707
[QUIT]
[BACK][ORDER]
710
709
708

FIG. 8

800

[HOME][BACK][FORWARD][LAST]

Customer order confirmation
You have ordered the following software products:

Product	Type of Purchase	Tokens Required
Software A	Purchase	100
Software D	For rental use to process 1,000 times	80
	Total # tokens required for this purchase	180

You already have Software D installed on your computer.
1. We will download Software A with permanent authorization code.
2. We will download a new authorization code for the addition of 1,000 processings for Software D.

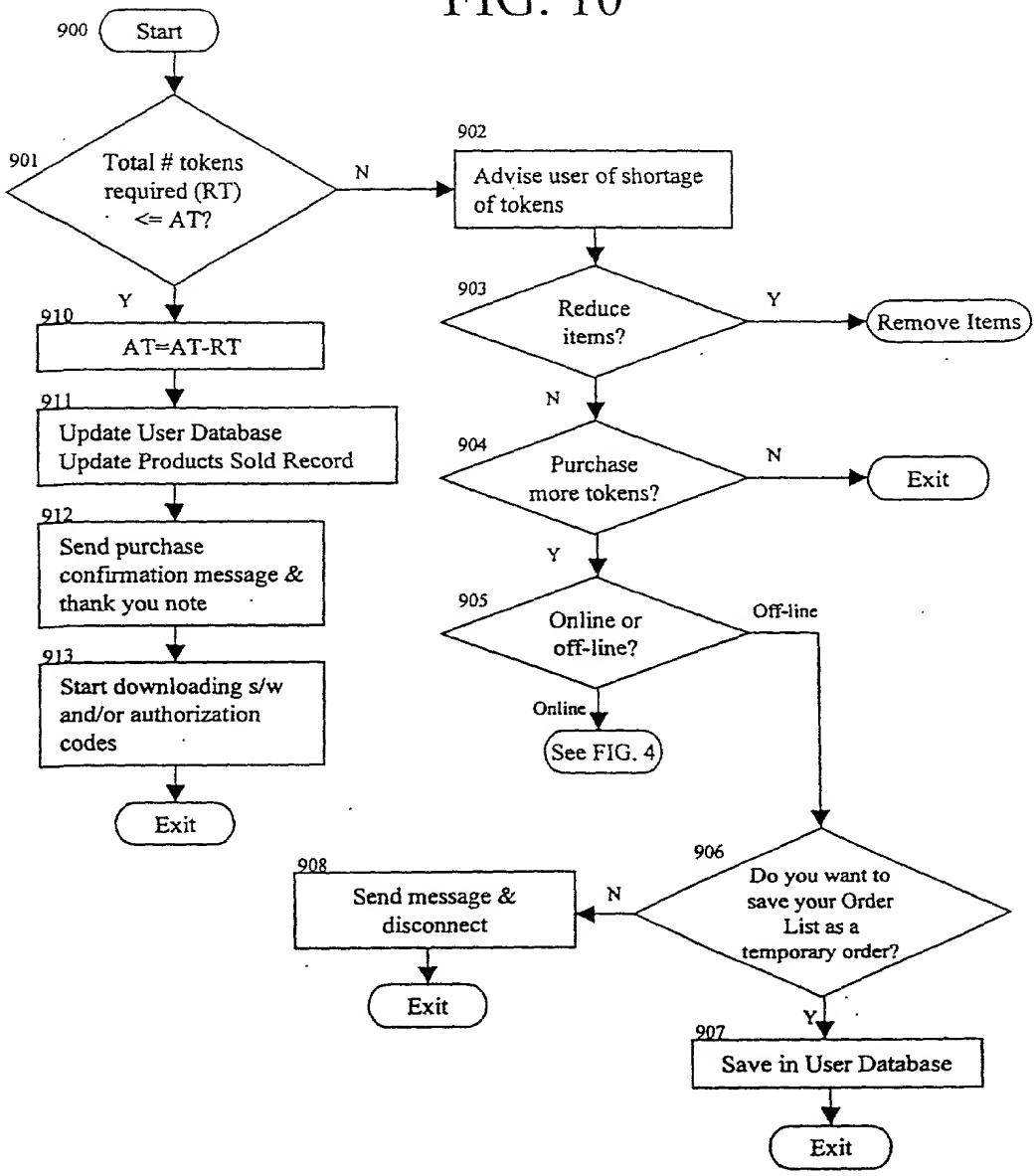
Total tokens required RT	User AT	New AT
[180]	[500]	[320]
801	802	803

[QUIT] [BACK] Click here if OK: [ORDER CONFIRMED]

806 805 804

FIG. 9

FIG. 10


900
Start
901
Total # tokens required (RT) <= AT?
N
902
Advise user of shortage of tokens
Y
910
AT=AT-RT
911
Update User Database
Update Products Sold Record
912
Send purchase confirmation message & thank you note
913
Start downloading s/w and/or authorization codes
Exit
903
Reduce items?
Y
Remove Items
N
904
Purchase more tokens?
N
Exit
Y
905
Online or off-line?
Off-line
Online
See FIG. 4
906
Do you want to save your Order List as a temporary order?
N
908
Send message & disconnect
Exit
Y
907
Save in User Database
Exit

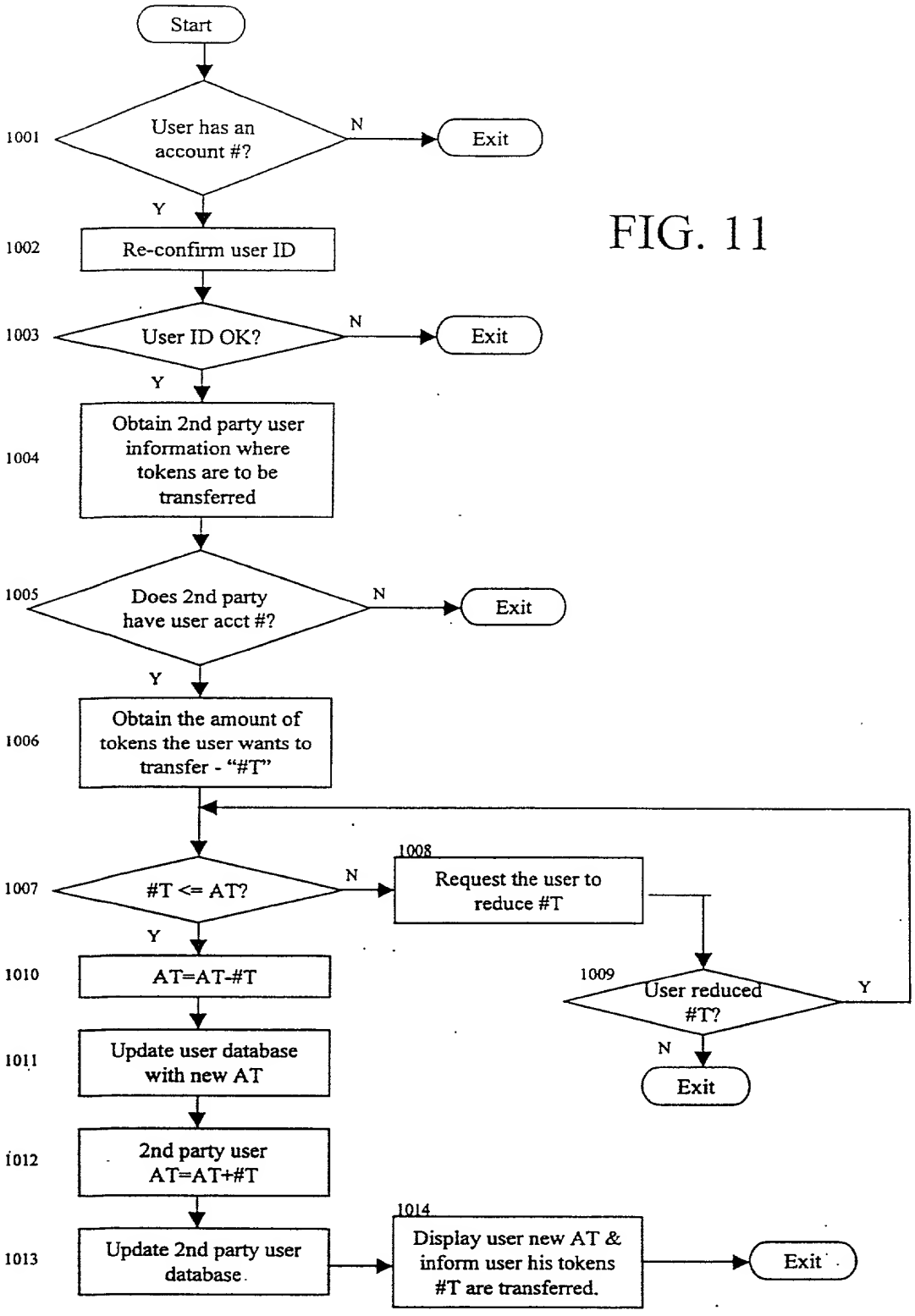
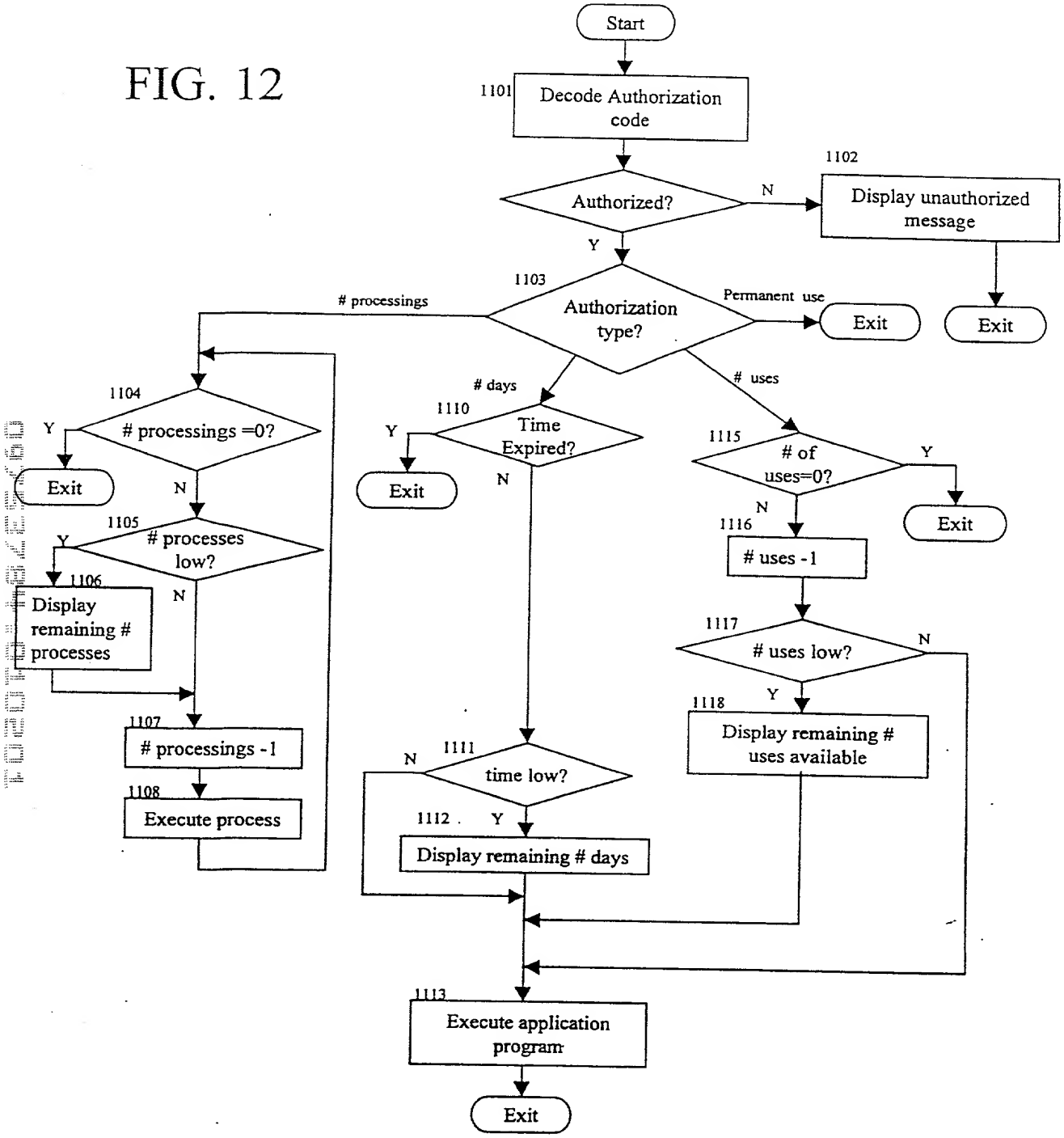

Start
1001
User has an account #?
N
Exit
Y
1002
Re-confirm user ID
1003
User ID OK?
N
Exit
Y
1004
Obtain 2nd party user information where tokens are to be transferred
1005
Does 2nd party have user acct #?
N
Exit
Y
1006
Obtain the amount of tokens the user wants to transfer - "#T"
1007
#T <= AT?
N
1008
Request the user to reduce #T
1009
User reduced #T?
Y
N
Exit
Y
1010
AT=AT-#T
1011
Update user database with new AT
1012
2nd party user AT=AT+#T
1013
Update 2nd party user database
1014
Display user new AT & inform user his tokens #T are transferred.
Exit

FIG. 11

FIG. 12


Start
1101
Decode Authorization code
Authorized?
N
1102
Display unauthorized message
Exit
Y
1103
Authorization type?
processings
Permanent use
Exit
days
uses
1104
processings =0?
Y
Exit
N
1105
processes low?
Y
1106
Display remaining # processes
N
1107
processings -1
1108
Execute process
1110
Time Expired?
Y
Exit
N
1111
time low?
N
1112
Y
Display remaining # days
1115
# of uses=0?
Y
Exit
N
1116
uses -1
1117
uses low?
N
Y
1118
Display remaining # uses available
1113
Execute application program
Exit

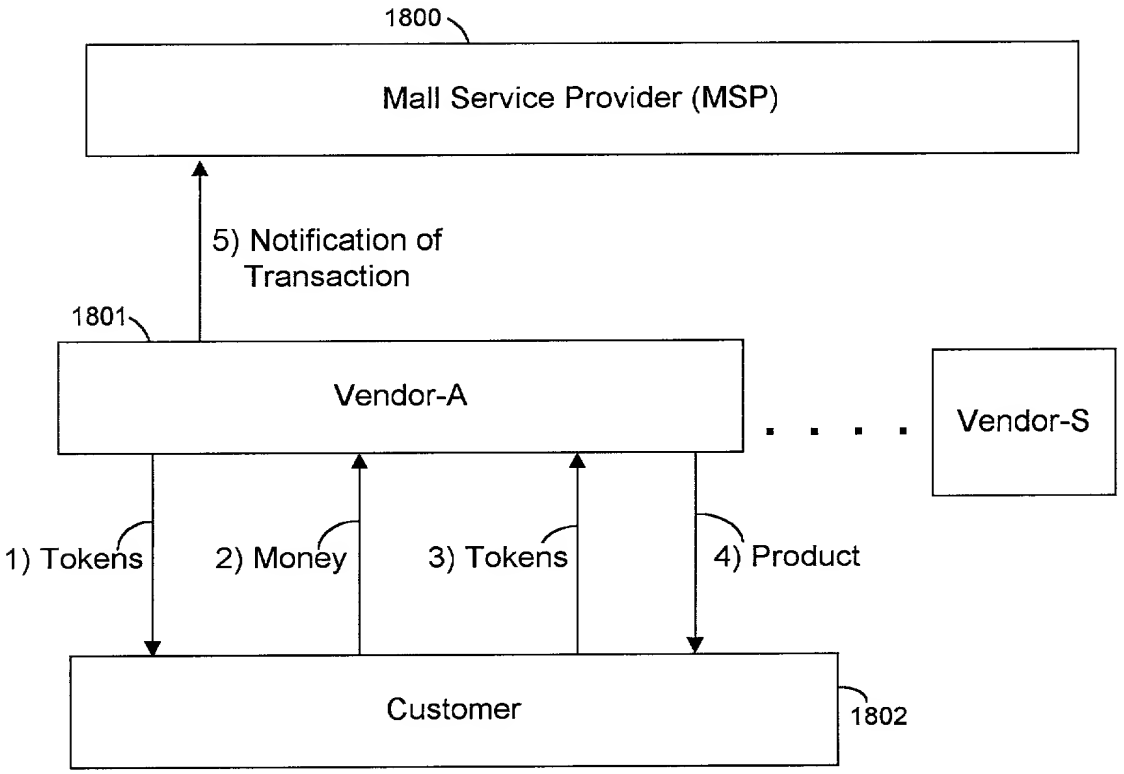

1800
Mall Service Provider (MSP)
5) Notification of Transaction
1801
Vendor-A
Vendor-S
1) Tokens
2) Money
3) Tokens
4) Product
Customer
1802

FIG. 13

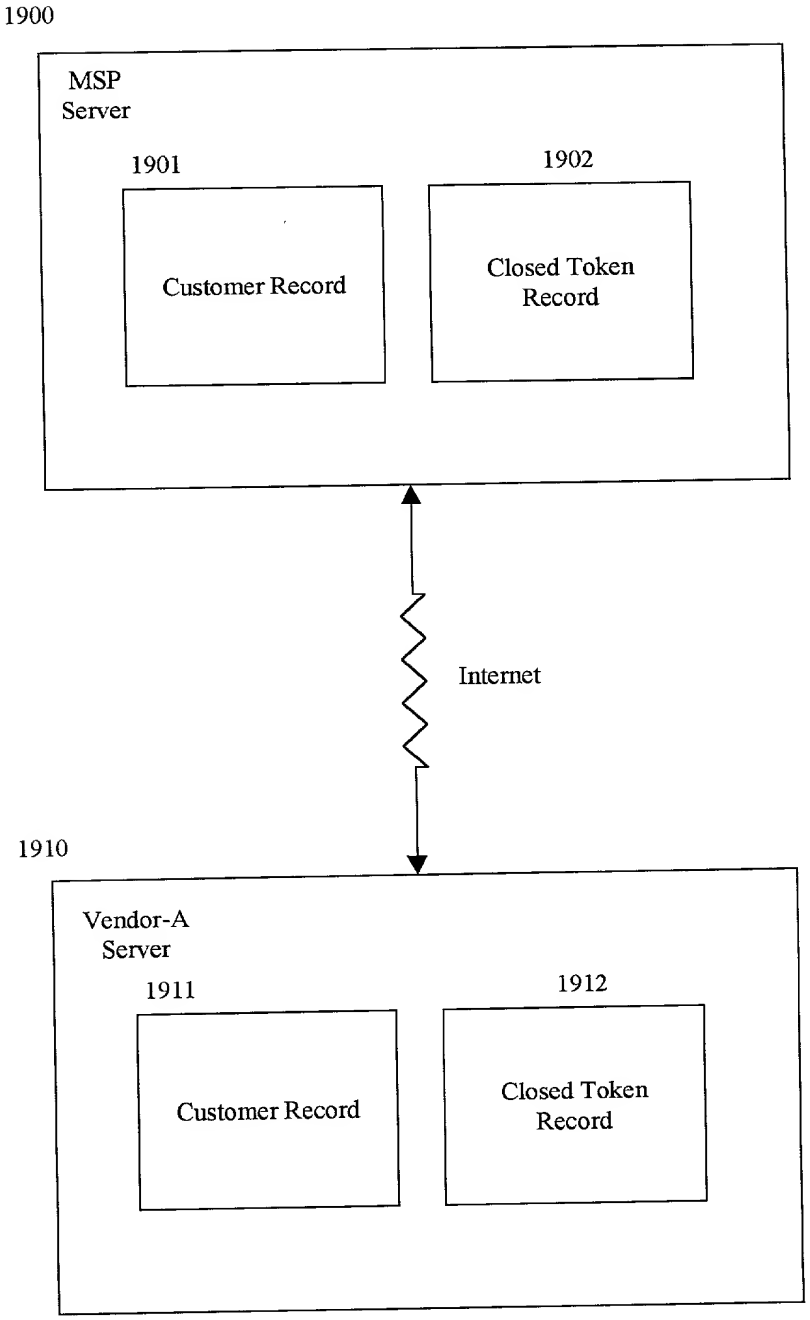

1900
MSP Server
1901
Customer Record
1902
Closed Token Record
Internet
1910
Vendor-A Server
1911
Customer Record
1912
Closed Token Record

FIG. 14

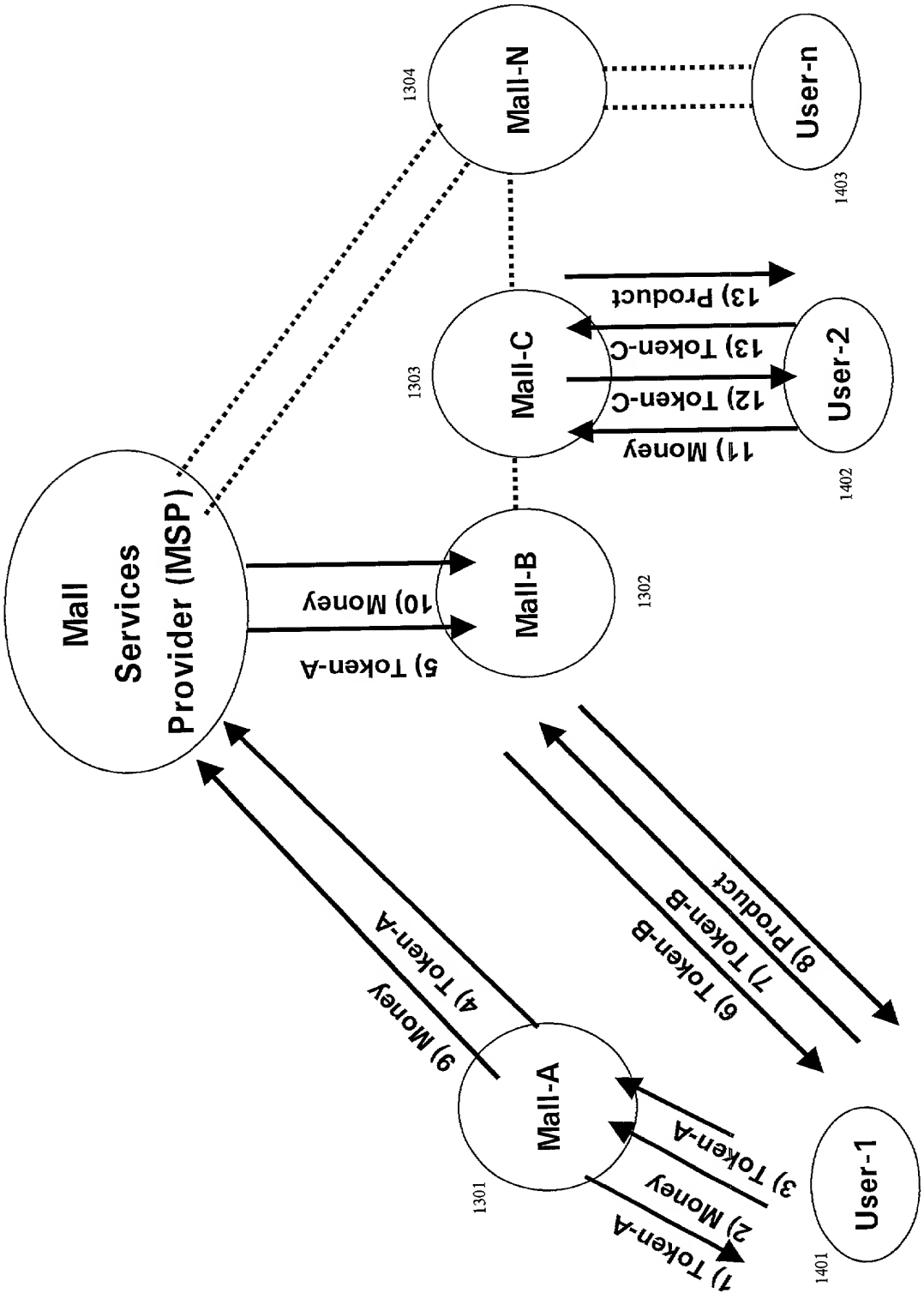

1300
Mall Services Provider (MSP)
Mall-A
1301
Mall-B
1302
Mall-C
1303
Mall-N
1304
User-1
1401
User-2
1402
User-n
1403
1) Token-A
2) Money
3) Token-A
4) Token-A
5) Token-A
6) Token-B
7) Token-B
8) Product
9) Money
10) Money
11) Money
12) Token-C
13) Token-C
13) Product

FIG. 15

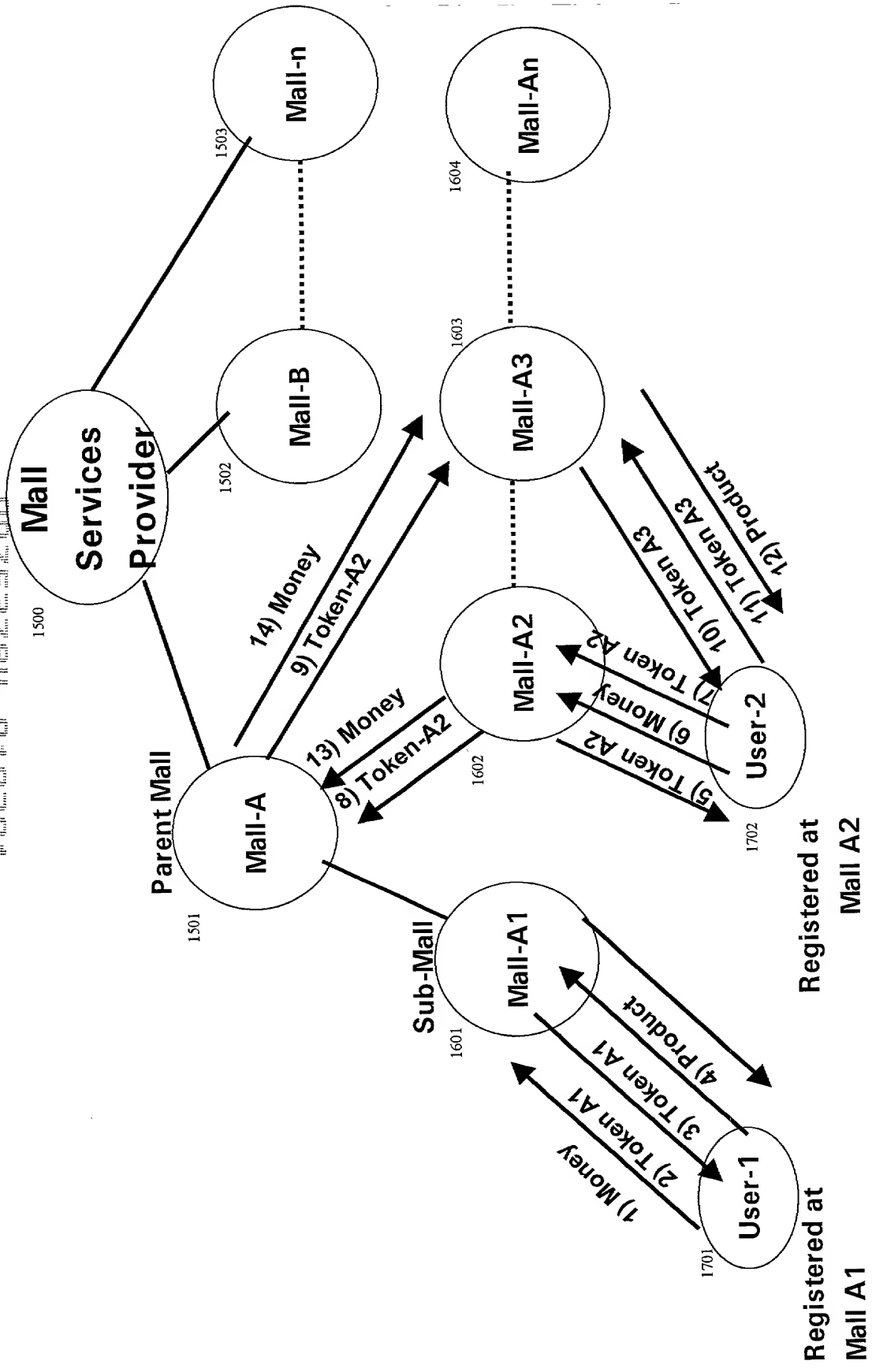

Mall Services Provider
1500
Mall-n
1503
Mall-An
1604
Mall-B
1502
Mall-A3
1603
Mall-A2
1602
Mall-A
1501
Parent Mall
Mall-A1
1601
Sub-Mall
User-2
1702
Registered at Mall A2
User-1
1701
Registered at Mall A1
14) Money
9) Token-A2
13) Money
8) Token-A2
10) Token A3
11) Token A3
12) Product
7) Token A2
6) Money
5) Token A2
1) Money
2) Token A1
3) Token A1
4) Product

FIG. 16

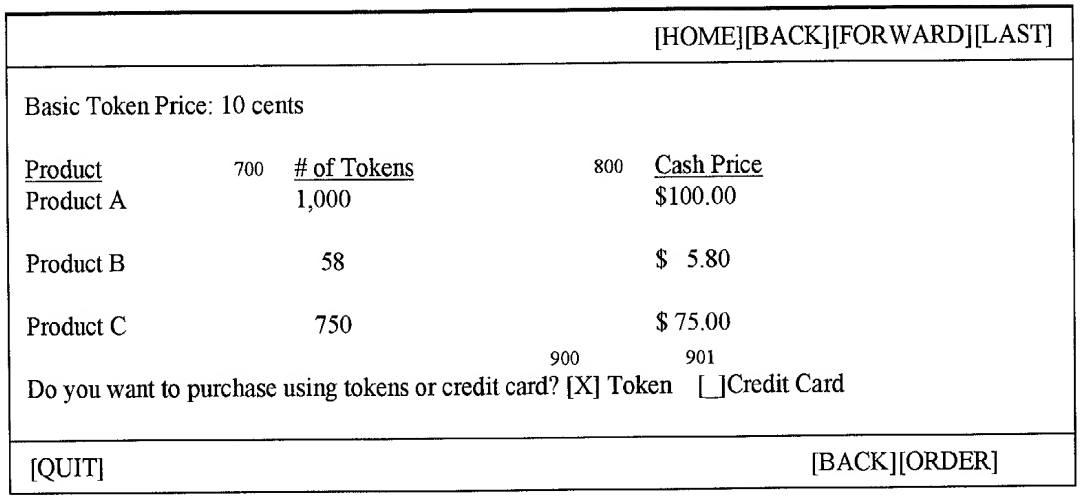

[HOME][BACK][FORWARD][LAST]
Basic Token Price: 10 cents
Product
700
# of Tokens
800
Cash Price
Product A
1,000
$100.00
Product B
58
$ 5.80
Product C
750
$ 75.00
900
901
Do you want to purchase using tokens or credit card? [X] Token [_]Credit Card
[QUIT]
[BACK][ORDER]

FIG. 17

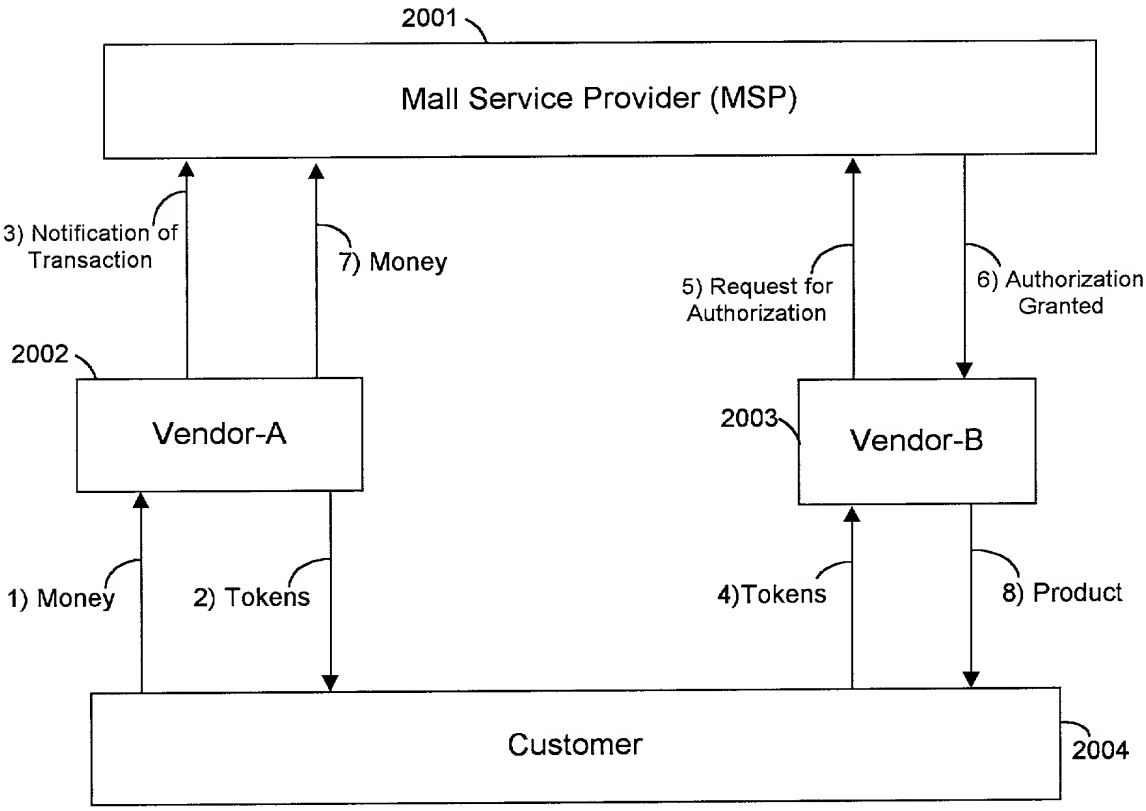

2001
Mall Service Provider (MSP)
3) Notification of Transaction
7) Money
5) Request for Authorization
6) Authorization Granted
2002
Vendor-A
2003
Vendor-B
1) Money
2) Tokens
4)Tokens
8) Product
Customer
2004

FIG. 18

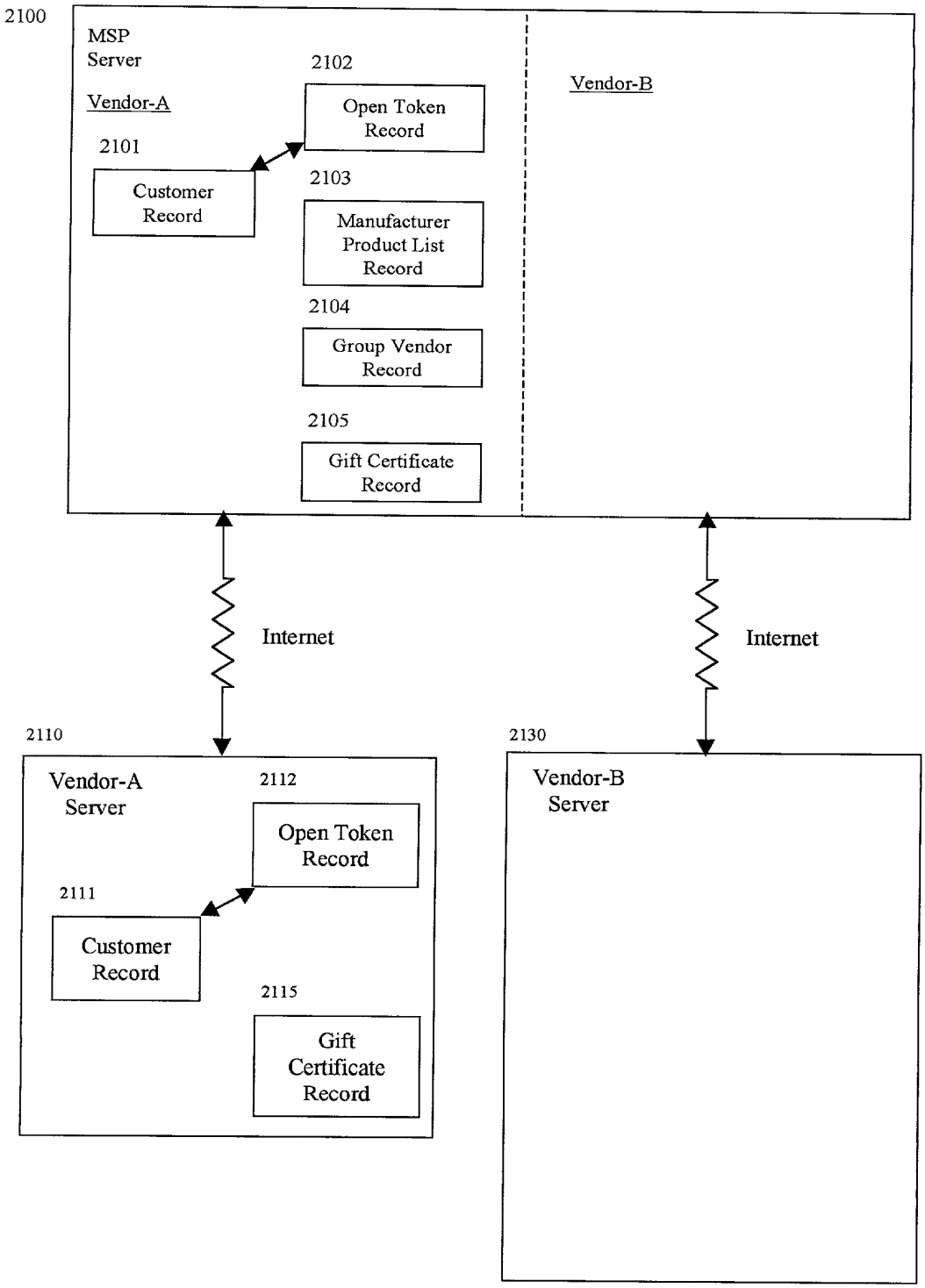

2100
MSP Server
Vendor-A
2101
Customer Record
2102
Open Token Record
2103
Manufacturer Product List Record
2104
Group Vendor Record
2105
Gift Certificate Record
Vendor-B
Internet
Internet
2110
Vendor-A Server
2111
Customer Record
2112
Open Token Record
2115
Gift Certificate Record
2130
Vendor-B Server

FIG. 19

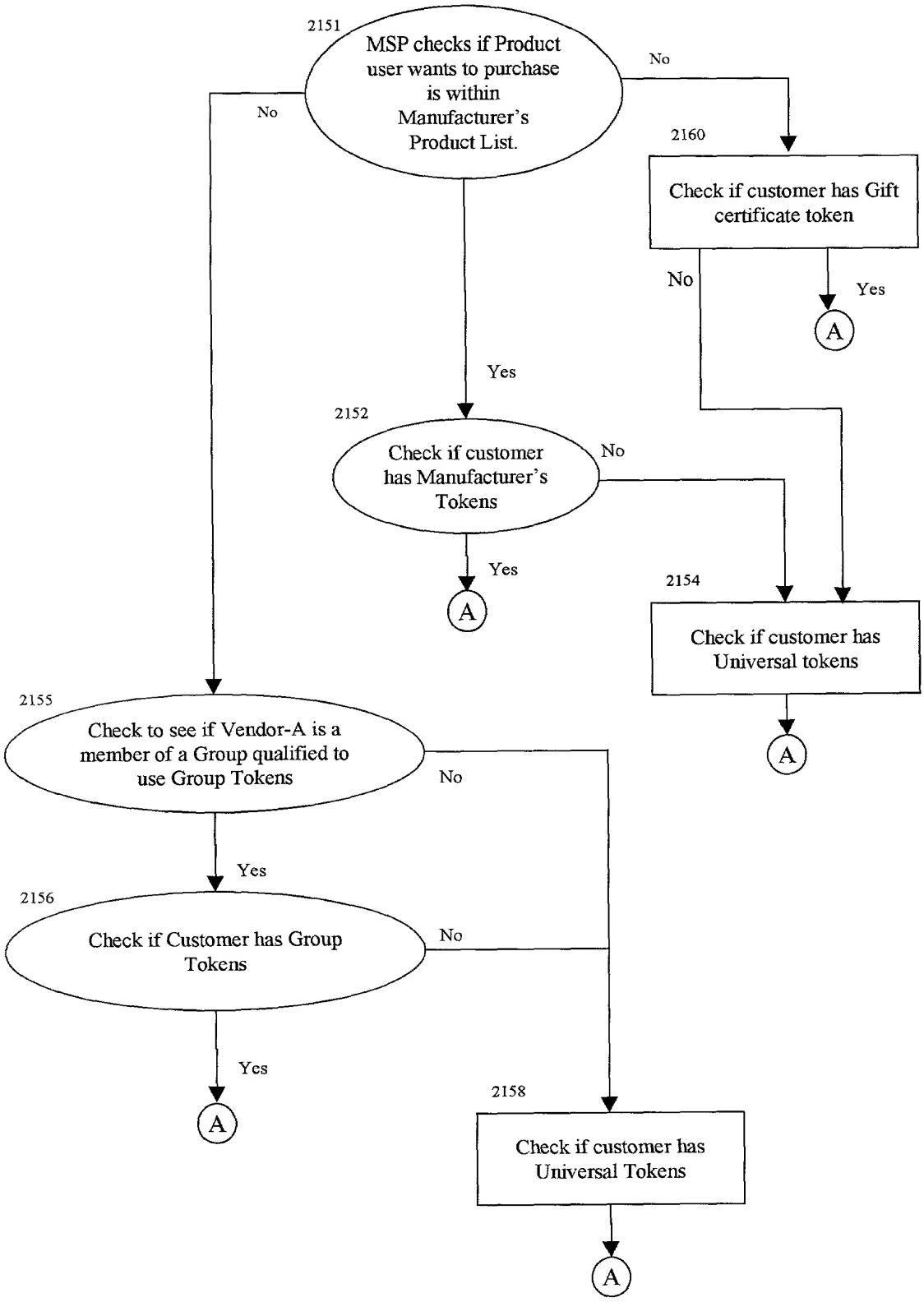

2151
MSP checks if Product user wants to purchase is within Manufacturer's Product List.
No
No
2160
Check if customer has Gift certificate token
No
Yes
A
Yes
2152
Check if customer has Manufacturer's Tokens
No
Yes
A
2154
Check if customer has Universal tokens
A
2155
Check to see if Vendor-A is a member of a Group qualified to use Group Tokens
No
Yes
2156
Check if Customer has Group Tokens
No
Yes
A
2158
Check if customer has Universal Tokens
A

FIG. 20A

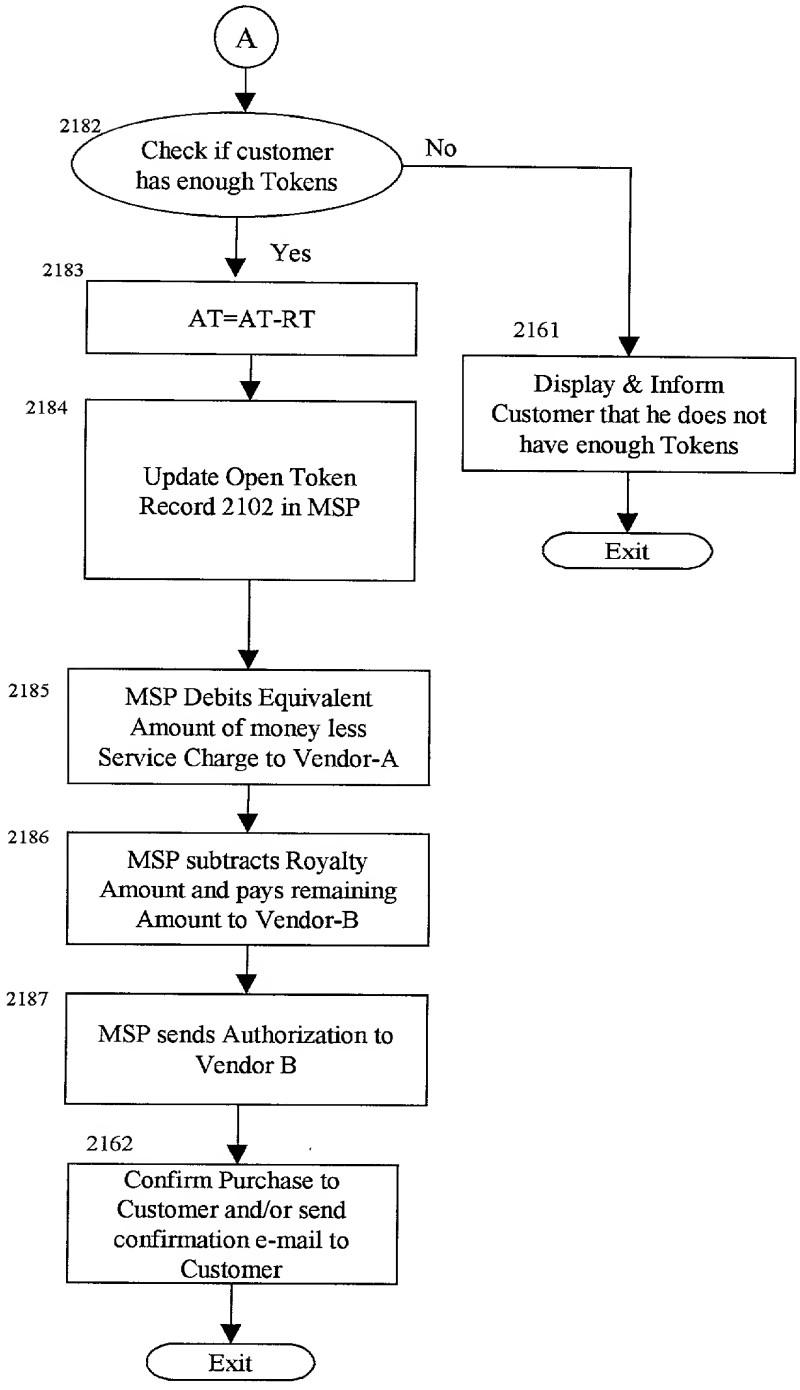

A
2182
Check if customer has enough Tokens
No
Yes
2183
AT=AT-RT
2161
Display & Inform Customer that he does not have enough Tokens
Exit
2184
Update Open Token Record 2102 in MSP
2185
MSP Debits Equivalent Amount of money less Service Charge to Vendor-A
2186
MSP subtracts Royalty Amount and pays remaining Amount to Vendor-B
2187
MSP sends Authorization to Vendor B
2162
Confirm Purchase to Customer and/or send confirmation e-mail to Customer
Exit

FIG. 20B

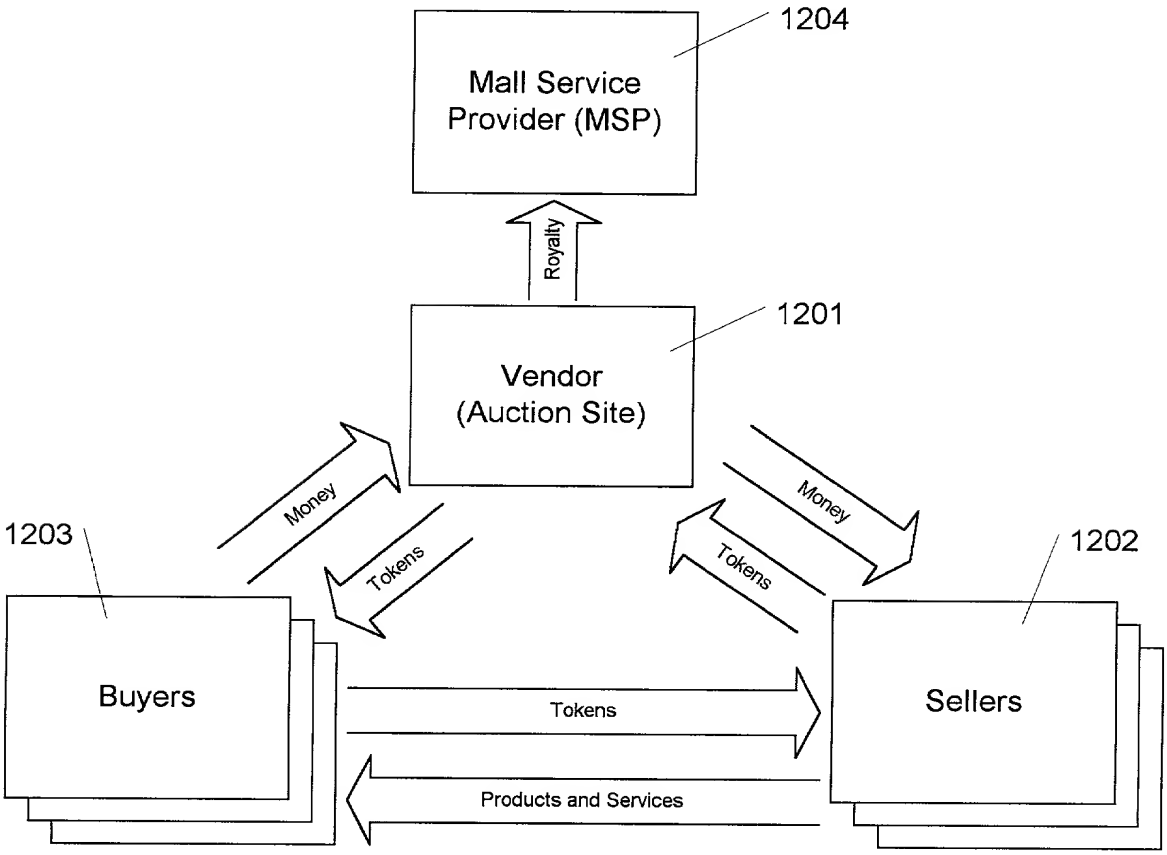

1204
Mall Service Provider (MSP)
Royalty
1201
Vendor (Auction Site)
Money
Tokens
Money
Tokens
1203
1202
Buyers
Tokens
Sellers
Products and Services

FIG. 21

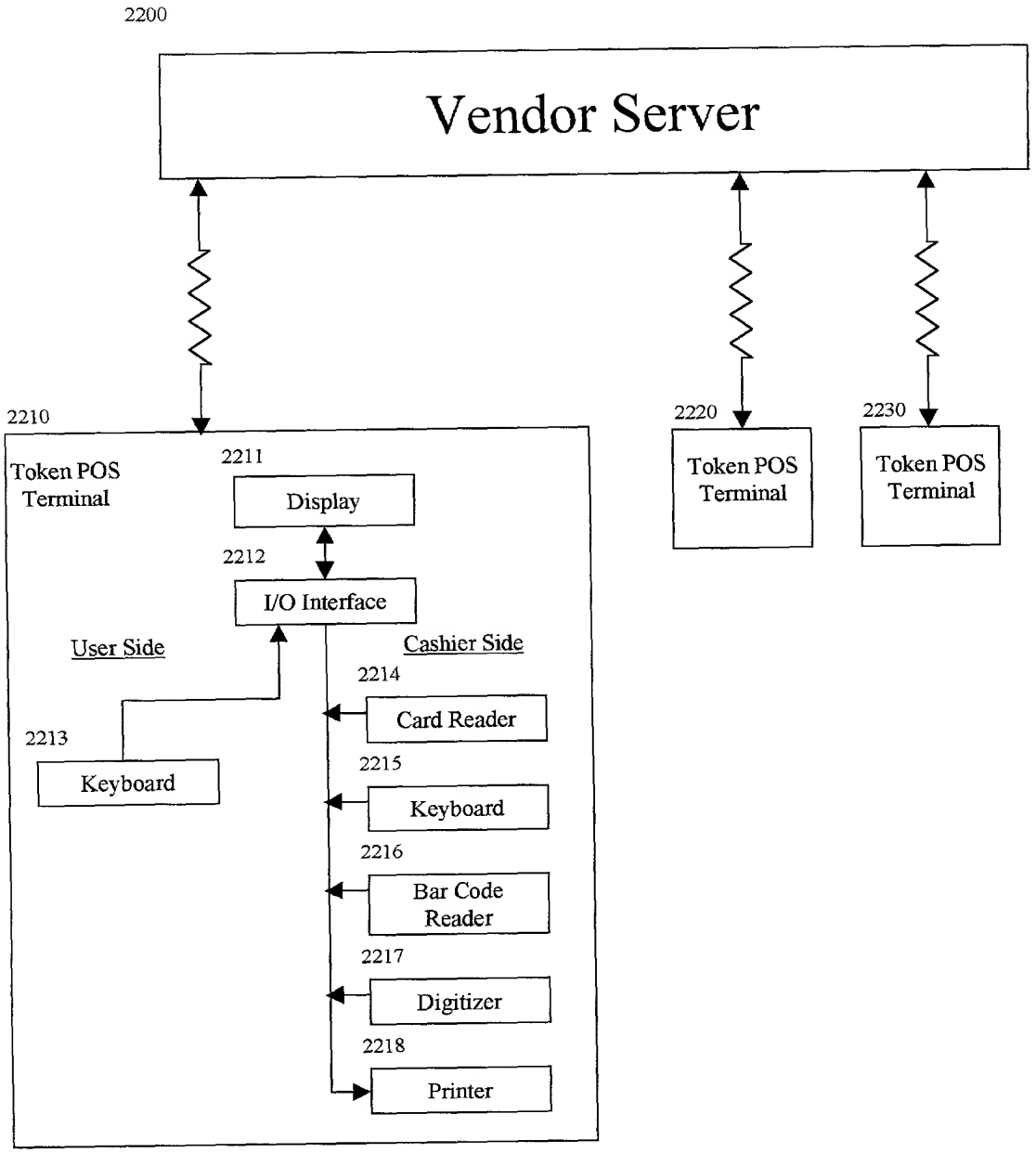

2200
Vendor Server
2210
Token POS Terminal
2211
Display
2212
I/O Interface
User Side
Cashier Side
2213
Keyboard
2214
Card Reader
2215
Keyboard
2216
Bar Code Reader
2217
Digitizer
2218
Printer
2220
Token POS Terminal
2230
Token POS Terminal

FIG. 22

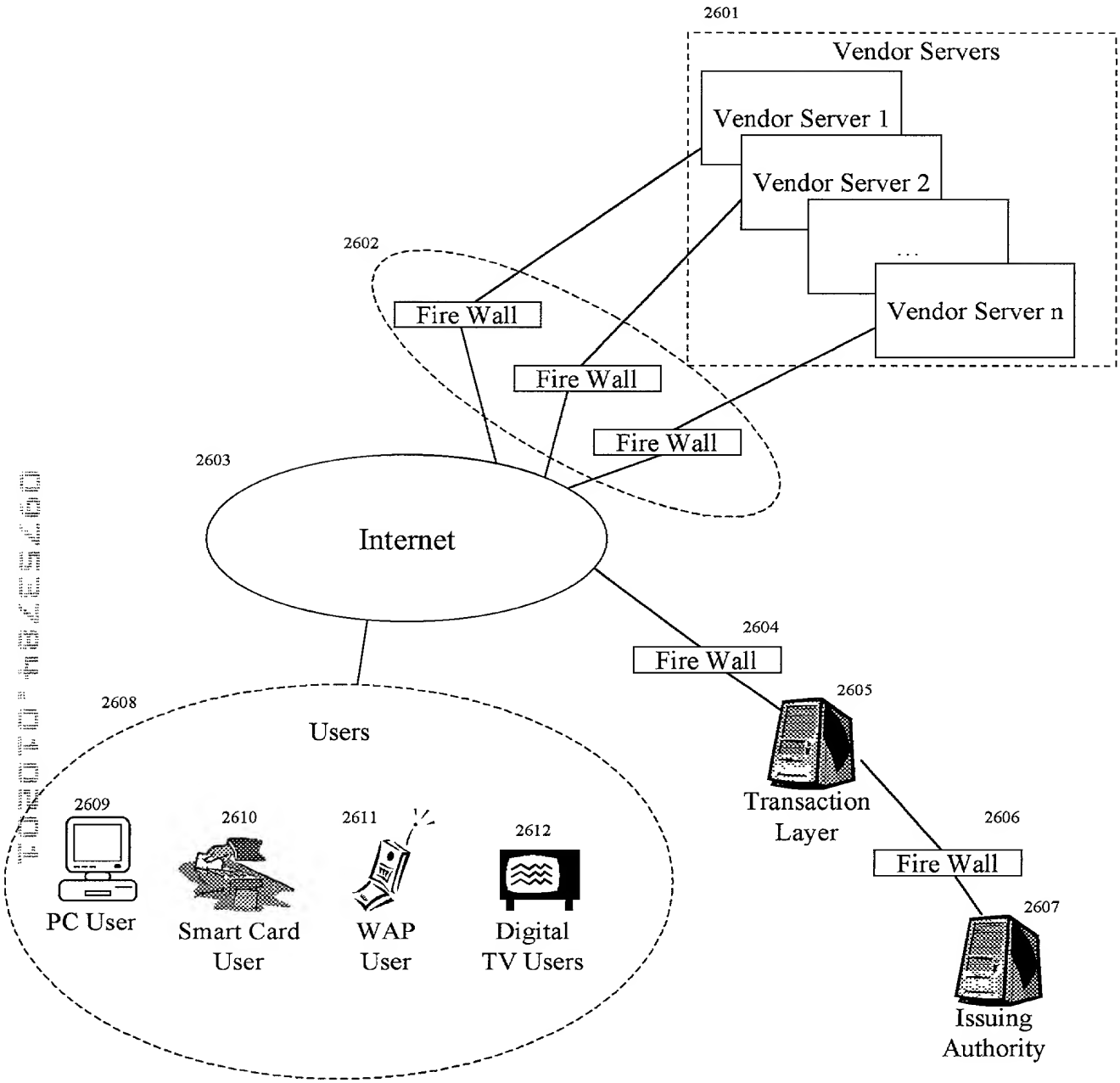

2601
Vendor Servers
Vendor Server 1
Vendor Server 2
...
Vendor Server n
2602
Fire Wall
Fire Wall
Fire Wall
2603
Internet
2604
Fire Wall
2605
Transaction Layer
2606
Fire Wall
2607
Issuing Authority
2608
Users
2609
PC User
2610
Smart Card User
2611
WAP User
2612
Digital TV Users

FIG. 23